CASE STUDY

Rockwell Collins
and
IBEW Locals 1362 and 1634

Investing in Knowledge, Skills, and Future Capability
in an Uncertain Business Environment

Summary

Who: Rockwell Collins and IBEW Locals 1362 and 1634

Where: Cedar Rapids and Coralville Plants

When: Site Visit: October 2001

What: Two leading-edge facilities committed to continued investment in skills, capability, and continuous improvement, facing very different market conditions.

When the Going Gets Tough, Should the Tough Keep Learning?

The post-September 11th economy has confronted Rockwell Collins in Cedar Rapids, Iowa with hard choices. Faced with the need to cut costs, including laying off significant portions of the work force, the company and its unions still maintain a commitment to knowledge retention and knowledge building. This case study chronicles the efforts of this leading producer of advanced communication and aviation electronics for the commercial market and the defense industry to balance the costs of maintaining productive effectiveness while responding to market pressures. The company is faced with increased technical requirements and depressed demand for its products, which include: in-flight entertainment systems, aircraft communication systems, global positioning systems (GPS), flight deck displays (including collision alert systems and virtual landing aids), communications systems, and automatic flight controls. Survival depends on walking a strategic knife edge to sustain the bottom line and still maintain the innovation and flexibility needed to build products to market demand.

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Corporate History and Background

Rockwell Collins has a long history of being on the cutting edge of technological change. The Avionics and Communication Division of Rockwell International Corporation was first established in Cedar Rapids, Iowa in 1931 when Arthur Collins set up shop in his basement. In 1933, Collins was asked by Admiral Byrd and CBS to supply radio communication gear and expertise for the historic South Pole expedition. Subsequent Collins's products have helped make possible the first transmissions from the moon and have contributed greatly to the hand-held global positioning satellite technology used in the U.S. military today.[1]

[1] The precision lightweight GPS receiver (PLGR) is a handheld unit made in Coralville that can pinpoint the location of the holder to within one meter. PLGR can literally be the difference between life and death in combat situations. By some estimates, 25% of the U.S. casualties in the first Gulf War were fratricide (killed by friendly fire).

The company has evolved over time. In 1996, Rockwell Corporation sold its aerospace business to Boeing, leaving Rockwell Collins as the core element in the electronics business of the parent company. In July 2001, the company separated from Rockwell to become an independent entity. Ironically, *Business & Commercial Aviation* reported that the spin-off had been timed to occur when the company was in good financial condition and with the economy projected to pick up in early 2002.[2]

The electronics supplier forecast revenue of slightly more $2.8 billion in the fiscal year ending 9/30/2001 and employed approximately 17,500 people worldwide.[3] This case is based on data collected in October 2001, not long after the attacks on the World Trade Center and Pentagon. The repercussions of those attacks, as well as already existing economic conditions, created a serious crisis for the firm. On September 26, cuts of up to 15% of the workforce or 2,800 workers were announced.[4] The company said it was taking action quickly, to combat expected falloff in revenues.[5]

> "Due to the current economic situation, we are taking aggressive action to address the expected reduction in next year's revenues."
>
> Chief Executive, Clay Jones [6]

Although the company was on target to meet Wall Street 2001 earnings estimates of between $1.41 and $1.45 per share for the year ending September 30, it faced a fourth-quarter restructuring charge related to its in-flight entertainment business. The economic impacts were larger than expected because only about 37% of Rockwell Collins's sales were to the government with the rest to the commercial sector.[7]

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[2] "Collins Chief Bullish over Spinoff," *Business and Commercial Aviation*, New York, September 2001, v89/3, p.31.

[3] Information taken January 2002 from Rockwell Collins corporate website at http://www.rockwellcollins.com/.

[4] "Rockwell units to cut jobs," *Financial Times London*; Edition: 30, September 26, 2001. "Rockwell spin-offs to axe 3,300 extra jobs MANUFACTURING BOTH UNITS BLAME CONTINUING SLOWDOWN OF US ECONOMY," *Financial Times* USA Edition: 20, September 26, 2001. Iowa City, "Iowa-Based Rockwell Spinoff to Cut Workers," *Dallas Morning News* (TX), September 26, 2001. "Rockwell Collins Will Lay Off 15% of Its Work Force," *Wall Street Journal* (3 Star, Eastern (Princeton, NJ) Edition), CCXXXVIII (61): A8, September 26, 2001.

[5] "Rockwell units to cut jobs," *Financial Times London*; Edition: 30, September 26, 2001; Following the US terrorist attacks, domestic airlines almost immediately cut capacity by 20 per cent and laid off tens of thousands of workers. The actions rippled through the aerospace industry, culminating in the decision by Boeing, the largest aircraft maker, to cut up to 30,000 jobs and trim production expectations.

[6] Ibid

[7] Iowa City, "Iowa-Based Rockwell Spinoff to Cut Workers," *Dallas Morning News* (TX), September 26, 2001.

In a tight economic situation, a common corporate response is to restrict or cancel most scheduled training and development activities. By contrast, on our visit to Rockwell Collins's corporate campus facilities and two manufacturing plants (in Cedar Rapids and Coralville), we saw and heard about many ongoing or newly created initiatives to encourage employee development and learning at all levels. The Cedar Rapids and Coralville plants are located within thirty miles of one another, but they face very different economic situations. The Cedar Rapids plant produces commercial and military products and faces severe layoffs while the Coralville plant builds defense products and faces few, if any, lay-offs of permanent employees.

Together, these two facilities represent a microcosm of the U.S. aerospace industry. In each of these distinctive situations, the facilities are grappling with human capital and learning issues. Tracking existing competencies, as well as future skills needs, has become critical for all job classifications - hourly and salaried - to maintain the skills base and plan for succession/continuity. Our discussions focused on corporate and facility-level plans to manage the strategic knowledge bases needed to ensure the company's competitiveness. Rockwell Collins's knowledge management strategies provide valuable insight into the possibilities for ongoing workforce development tightly linked to the bottom line.

Corporate Level Learning

The corporate learning and development staff in Cedar Rapids, led by Cliff Purington, has designed and implemented an e-learning plan that reportedly increases learning and reduces costs while shifting a corporate learning culture from the classroom to the individual desktop or work station. Technology and global organizational dispersion drive training out of the classroom and require overhauling attitudes among all those involved in the process.

The corporate plan has three components:

- a computer-based system that allows worldwide, 24x7 access to training and information at stations near the work areas for all Rockwell Collins employees;

- skills assessment software that allows salaried employees to track the skills within their department and the organization, diagnose their own individual training needs, and eventually allow 360-degree performance evaluations; and

- a series of CD-based lessons, called Quick Learns, which are approximately 20-minute video segments of hourly employees showing how they perform elements of their work.

The materials and tools can be accessed through a corporate intranet site called Oasis. Since the program was not yet complete at the time of our visit, it was only accessible to salaried employees. Hourly employees will eventually be included.[8] Purington reports that his department can already report major successes. Three primary accomplishments illustrate how the program effects the company's learning environment and the bottom line. While these accomplishments are significant and we do not want to take away from the importance of these successes, there are some negative aspects about these initiatives that should be considered.

First, almost 90% of the 400-plus courses in the training curriculum is online – allowing continuous worldwide employee access. This 24x7 access allows employees around the world to take part in a greater variety of training and developmental activities than possible with traditional classroom training. One issue of concern for a global enterprise is consideration of language proficiencies among all employees. A second issue to consider is whether employees at all global locations have access to equivalent hardware or electronic equipment.[9]

Second, the workforce is neither dependent on travel for training nor constrained by a static classroom training regimen. Rather, employees can access training materials at their own pace and as needed. There is a tradeoff between the benefits of at-will-access to information and the loss of interaction in classroom and more social learning activities. One goal of Rockwell Collins's plan is to change the training culture from classroom-centered activities to learner-controlled, where the learner controls when to learn, how much material is needed, and how to schedule the learning to fit most effectively into a busy work schedule. Making this transition represents a huge shift in attitudes about the relationship of learning to day-to-day work life.

Third, to date, the reported results of this new program are dramatic and encouraging. Learning has continued and training costs have been reduced by 40%. In the current downturn, the company and its employees benefit from this new system because learning can continue as employees access the system to develop new skills. The company can offer training and

[8] There are still questions to be resolved about developing standardized skills definitions and how to measure the needed skill mix. It will be possible for people to log on and work through a personalized development plan. Eventually the skills assessment software will also integrate with recruitment, upgrade training, and developmental training.

[9] Mark A. Verspei, "Click and Learn," *Industry Free Magazine*, January 15, 2001: http://www.industryweek.com describes efforts to insure that all machines had sound cards. The geographic scope of these efforts is not clear.

development opportunities despite restrictions imposed by cost-reduction pressures. A skills base is being preserved despite the retirement or departure of employees.

The Learning and Development Team at Rockwell Collins has created a strong set of relationships with vendors across the spectrum of workforce learning and development products. The program being implemented uses a variety of specially developed products as well as a combination of off-the-shelf products. The working relationship with the vendors that has grown as the program is rolled out also allows -and-take of services that help employees. For example, Purington points out that they were able to convince one online job search site to allow displaced workers a period of free access. The value-added nature of collaborative relations with vendors is a previously unexplored bonus for the firm.

Corporate Succession Planning and Mentoring

Succession planning can contribute to business success. Collins and Porras identified 18 companies that have led their industries for 50 to 100 years and found one of the key success variables was a strong focus on succession planning and management development.[10] Executive succession planning is underway at Rockwell Collins with a "goal to identify, assess, and develop a diverse corporate leadership talent pool."[11] The company is concerned about maintaining an adequate knowledge and expertise base among its white-collar ranks. The plan is aimed at identifying people who can fill management jobs quickly as well as nurturing employees who have the potential to fill higher level positions during their careers. The highest level executives were tasked to identify 2-3 people within the organization and one from outside who could replace them.

The staffing reduction decisions made necessary by the market downturn in 2001 and the terrorist attacks of September 11, 2001 have highlighted the importance of adequate assessment of skills needs and skills identification. A large number of engineers working on commercial products were laid off. Most will leave the Cedar Rapids area and will not be available to be immediately rehired when the economy picks up. Succession plans for engineers had a slightly different focus since engineering thought it might not find people with the specific knowledge needed to step into key technical positions. The implementation of the Skillscape evaluation software will help identify some of the needed skills and potential gaps that might occur if an individual left the firm.

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[10] James C. Collins and Jerry I. Porras (1994), Built to Last: Successful Habits of Visionary Companies, HarperBusiness: New York, NY.

[11] From internal company documents provided by Kevin Weiss, Director of Human Resources for Rockwell Collins, October, 2001.

Rockwell Collins has also set up a mentoring program to help employees gain professional skills and insight. Senior managers are becoming involved in active on-the-job interactions. The parties mutually select and meet each week for 1-2 hours. At the time of our visit, 105 mentors worked with 130 mentees in 11 out of 12 business units. Of these current pairs, 15 to 20 are believed to be cross-functional. Beyond the direct learning, these relationships are credited with helping to reduce turnover. There is a 3% attrition rate among those who are mentored as compared to the normal 5-8 % rate the company has normally experienced. Both mentors and mentees receive training to support their work.

Engineering Staff Development and Recruitment

Dr. Rodney Mickelson, Director of Advanced Technology Engineering, described the competition in recruitment of engineers. He explained that although both commercial and military operations needed people with broad and deep skills, the company "fights more" with commercial industry for talent. He said that young engineers were attracted to the technical challenges offered by Rockwell Collins but companies located on the coasts were more appealing to younger engineers than the Midwest. This shifts as people begin to raise families when they can be more easily attracted to work and live in Iowa.

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Success in Mickelson's department is based on program success and an informal review of his programs has shown him that they are more successful when people get along. Engineers from his area often work with people from other areas and work groups so he pays attention to interpersonal skills. Of course, people are hired for their capabilities first but must have interpersonal skills to remain effective. The company tries to hire "chameleons" who can quickly adapt and blend technological skills bases. The experts in his department must serve as mentors and trainers. Mickelson said, "I have to home grow some technical skills, so I need people who know how to pass these on to others." Interestingly, training in these types of interpersonal skills is not mandatory but is available on a voluntary basis and on the employee's own time.

Continuous learning is a critical part of the job, so developmental opportunities cover a spectrum from informal brown bag lunches among mechanical engineers or functional teams who do their own research, to efforts to support the development of "communities of practice" (COP) among

engineers. The goal of these COPs is to allow innovation to flourish while also building a greater shared base of knowledge. Sharing knowledge and maintaining the level of essential competencies needed to operate will become even more important in an environment where layoffs mean the loss of skilled employees.

Plant Level Knowledge Management Issues

Rockwell Collins management does not hesitate to give credit to employees for their success. As one IPT (Integrated Process Team) leader commented, "I'd be remiss if I didn't try to tap into the knowledge base. They (the employees) know as much today as I will ever know about their jobs." This attitude appears to prevail at Cedar Rapids and Coralville as they continue to break down the barriers to change.

The ability to work with – instead of against – the union has been instrumental in a mutually successful strategy to optimize the value of employee expertise. There was a remarkable level of shared responsibility among the union and management for the growth of the business as well as for the workforce. At the same time, both labor and management emphasize that each has separate organizational and legal responsibilities. The union locals clearly define their roles as representing their members and fulfilling collective bargaining obligations while management stresses the need to run the operations.

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The Cedar Rapids facility has as many as 8,000 employees and has been successful in designing new avionics and communication products, as well as implementing many lean principles. A noteworthy lean example is the co-location of engineers working with production teams to link production input into the design process. Still, the sheer size and age of the facility has posed many challenges, such as how to best establish flow operations in existing, crowded work areas.

The Coralville facility was purposefully designed to be a smaller (approximately 800 employees), more flexible, lower-cost organization focused from the beginning on using lean principles. Coralville prides itself on "merging the latest in high technology with a climate of flexibility and agility to yield a customized product for each customer," according to a high-ranking manager. The high performance work system and cooperative labor management relations have garnered the Coralville facility national recognition as one of *Industry Week's* America's Best Plants in 1996.[12] It also

[12] *Industry Week*, "America's Best Plants", A Pentagon Publication October 21, 1996.

has another unique characteristic; the collective bargaining agreement allows the company to employ temporary workers (not to exceed 8% of the workforce) who will be the first affected by a reduction in work force.[13]

Each of these facilities is faced with different dilemmas due to instability in the economy as well as upheaval arising out of the terrorist attacks of September 11, 2001. Responses are constrained by the economic environment, bounded by collective bargaining agreements, and mitigated by mutual belief in partnerships between labor and management. Although the details of events at each plant are vastly different, it is clear in both cases that there is a growing appreciation of the value-added contribution of the workforce at all levels.

Plant Level Activities: Cedar Rapids

The facility in Cedar Rapids is about to experience severe workforce reductions. As mentioned earlier, this facility produces both commercial and military products, and the demand for its commercial products had been declining for some time, but the cancellation of orders from big customers like Boeing and Airbus after September 11, 2001 has forced management action. Military orders did increase as a result of the September 11th attacks, but not enough to offset the decline in the commercial sector. The layoffs will be done in accordance with the rules negotiated in the contract between Rockwell Collins management and the International Brotherhood of Electrical Workers (IBEW) Local 1362.[14] Salaried and hourly employees may be able to retire, but many will be laid off. Wayne Flory, Senior Director of Manufacturing Operations, is worried because the impact of these reductions on the workforce will be tremendous. He is also concerned that there are no measures that allow the facility to predict the impact of these reductions beyond estimates of costs and effects on productivity.

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Cedar Rapids is an older facility that has been evolving from a more traditional labor management relationship to one that features greater employee involvement. This process has produced better relationships and an environment of cooperation that is growing over time. It appears that this

[13] Agreement Between the International Brotherhood of Electrical Workers, Local 1634 and Rockwell Collins, Coralville Operations, effective May 1 to May 2, 2003. pp. 26-27.

[14] According to the contract, workers cannot be laid off in October, November, and December, so the earliest hourly layoffs would begin in Cedar Rapids in January.

positive relationship helps maintain the information sharing that, now, is an especially important component of company and union responses to the workforce reductions that are underway.

Special provisions are being implemented to assist both hourly and salaried employees to find new work and apply for benefits. Kevin Weiss, Director of Human Resources for Rockwell Collins, described some of these activities. For example, his office is linking the laid off workers to resources such as the Iowa Workforce Development Office, job fairs, or regional job matching websites. Efforts are being made to help some workers complete training that is currently ongoing. Rosie Behel, IBEW Business Agent for Local 1362 described efforts to get funding from the Displaced Workers Fund to help test technician trainees continue their training even after they are laid off.

These efforts are important in the short term because they help workers who are in need of assistance as they lose their employment, but it also may help the company keep a pool of trained test technicians available for recall or rehire. As a result, the learning curve to get the plant up and running again could be much shorter. In the last round of layoffs only approximately 30% returned later.

Despite the unrest in the environment, local learning and development activities were still underway at Cedar Rapids. The Joint Training Committee (JTC) is one body working to improve training options. The JTC has established a continuing education program for test technicians. Contractual language mandates that test technicians have six hours of training each year to maintain wage upgrades. The committee assesses training needs on a yearly basis and helps to find in-house or alternative training resources, including local community colleges. The training may be web-based or traditional classroom training.

The Resource Room Team met with us in the training area that they have organized and staffed since 1994. Members of the workforce are encouraged to utilize the Resource Room to improve their computer and technical skills. Team members described how they provide essential skills training for work as well as for completion of the company's computer-based training. The Resource Room is located on the upper deck overlooking the workroom floor. The team sets its goals based on meeting customer needs and expectations for the services they provide. The team also creates training materials and reference guides. The results of this training effort were especially visible when the company implemented SAP (Enterprise Resource Planning software) as employees were able to respond quickly and efficiently to this new computer-based system because of the computer skills they learned from the Resource Team.

Despite their obvious pride in their accomplishments, members of this team were also concerned about the future. Several were certain that they were sure to be among the first workers laid off and one young man's words reflected this ambivalent attitude, "I'm the 'youngest' person in this room, so I'm 90% sure I'll be laid off. But there's the 10% chance that I won't, so I'm going to do my job as best I can until they tell me I'm laid off."

Over the years, collective bargaining has created a strong protective web of contract language that is one key element of job security. The language provides for a systematic reassignment of jobs to hourly workers according to their seniority. Those with low seniority get laid off and those with higher seniority may be shifted into the positions that are left empty by the layoffs. As these "bumping" procedures take place, knowledge management issues are created. For example, workers taking up new positions must learn to do those jobs in effective and highly productive ways. It takes time for people to move up the learning curve and match the productivity level of the recently displaced worker. It is often a very stressful situation due to the emotional upheaval of the layoffs and the frustrations of learning new work patterns.

In addition to his earlier stated concern around bringing workers back when the economy improves, IBEW Business Agent Rosie Behel emphasized the importance of sharing business information and concerns with the bargaining unit. In fact, information has to flow both ways. Behel explained, "If you share the information and tell them (the Bargaining Unit) the problems, these people will go off and solve the problems."

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Beyond measures of quality and productivity, the facility cannot truly measure the knowledge or human capital losses it is suffering, but union and management leadership understand the potential effect of loss of human capital on the overall success of the business. Increasingly, the shift to high involvement work organizations is shaping a joint understanding of the interdependency of a highly skilled workforce, a flexible work organization, and continuity of skill development. As workplaces become more integrated, external institutions like labor law and collective bargaining will need to shift to meet this new set of needs or this environment will create greater tensions.

Even in the midst of their efforts to cope with workforce reductions, plant managers were dealing with knowledge management issues. In discussions with senior management leaders Wayne Flory and Randy Buck, they highlighted the need to "capture tribal knowledge" and other long-term skill challenges. Flory recounted how, as the product mix changes and products re-enter production, the company has been in the position of having to bring back

retired employees to re-train the current workers to manufacture these products.

It takes a huge effort to ensure an appropriate skill mix. The plant has leadership development meetings and, for salaried employees, the IPT leader or department manager prepares a skills mix/skills need assessment for each position. The development plan goes into the employee's performance appraisal. For hourly employees, managers are always looking ahead for the next technology and the skills their employees will need to deal with it. They are currently expanding the skills mix program to the business unit level.

Plant Level Activities: Coralville

The Coralville facility was built in 1986. From the start, employees have been trained in team-based, high involvement work systems. This location produces products for the defense sector, which means that there is less impact from the general economic downturn due to an increase in military spending to support a response to terrorism. The plant was expecting few, if any, layoffs among the regular workforce. The hourly employees are represented by Local 1634 of the International Brotherhood of Electrical Workers (IBEW). Labor and management leaders reported a strong interest-based, problem-solving approach to union-management concerns was continuing to develop at the plant. Meetings often find leaders from both groups dealing with problems and also discussing how the business is doing.

Brian Heins, Vice President of IBEW Local 1634 in Coralville described a sense of mutual responsibility that characterizes the plant environment at this time. He described union and management leadership as people who realize that they have separate, important interests but who also share critical common interests in the success of the business. He also reported that the plant has maintained a high performance work system (HPWS) philosophy since it opened. Heins said that the union's day-to-day role had both traditional and non-traditional elements. Along with traditional responsibilities like contract enforcement, union leadership is very involved in the company as a business. For example, he says, "Since we became Collins, we have taken a keen interest in stocks." Management information sharing means that the union sees and hears what impacts the business. In turn, members are kept updated on business factors and lean implementation.

Another union activist, Terry Miller described an additional example of the success of this relationship. He reported how the Union helped put a bid together and bring work on a cable job into the facility. This was the first time anything like that had happened and union representatives were able to learn what went into a bid, how much money goes into a simple cable and found ways to be more efficient and reduce cost. He believes that one

outcome of such events is that, "The union will remain strong and the company will remain strong and we're striving for that."

Efforts to shift to a lean work environment were in full swing in the plant and producing dramatic results. Whole areas are being redesigned to streamline flow, reduce cycle time, and facilitate more cellular manufacturing. Cross-functional teams of employees, who analyze and map the flow of their work areas, are completing much of this redesign work. As this work progresses, they are reducing waste by improving process efficiency and space utilization.

The results here have also been dramatic. For example, in the last five months the time required to complete one portable GPS unit has been reduced from 5.5 hours to 1.9 hours. Productivity has also more than doubled in the same time period. The workforce is very involved with the introduction of lean and is conscious of the need to be competitive. One employee sums up the changes he has seen in his 25 years by saying, "I love it now. In my early days it was very much like a dictatorship and people did what they were told. Now you see the entire company and you understand the business. You make decisions all day long – it's harder but the results are much better."

Maintaining a high involvement environment requires people skills, willingness to change, and lean thinking according to human resource people at the plant. They credit Mark Correll, the Plant Manager, with creating a team approach that includes the union and gives everyone more of a voice in the plant's operations. A critical element of the success in Coralville is trust. As one IPT leader described it, "When the union and management leadership began to build trust, that's when we made improvement."

A critical element of the success in Coralville is trust.

When asked to describe the skills that he is looking for today in his workforce, Correll outlines clear elements for both hourly and salaried employees. Hourly employees must have high levels of problem-solving skills, be responsible and accountable, and possess mechanical dexterity. New hires on the salaried side of the house need to have a technical aptitude, problem solving mind and skill sets, and the ability to work well with people. He went on to say that it is important for people to have a "big picture perspective" so they can understand how what they do impacts the whole value stream.

Conclusions

Instability has presented Rockwell Collins with challenges at many levels. Organizationally, the knowledge management efforts underway must be extremely resilient to withstand the stresses caused by the effects of simultaneous economic pressures and cultural resistance to change. It is clear

that planning for the capture and dissemination of critical skills, expertise, and knowledge is ongoing. Technology is being harnessed to deliver information on demand around the globe wherever company employees work.

Monitoring and measuring the success of learning efforts and knowledge management programs also poses dilemmas for the company. Counting the numbers of people who take advantage of formal learning opportunities can indicate some level of the learning activities that go on. Learning is manifestly reflected in the ability of employees to analyze and adapt their work to make it more effective and efficient. This will result in increased productivity and reduction in costs as factors such as cycle times and flow are improved.

Learning at the Cedar Rapids facility is going to be affected by the layoffs. Ironically levels of learning may increase as people try to adjust to work they were slotted into due to the bumping procedures of the collective bargaining agreement. Of equal importance, however, is the development of a plan – an intellectual impact statement – that will help identify losses in skills, gaps in expertise, and the skill mix needed to maintain effective manufacturing activities now and when it becomes necessary to increase the workforce at some later date.

The innovative efforts of Cliff Purington and the corporate learning and development staff will survive but they must take care to maintain their links to the bottom line of corporate profitability. It is not always easy to sell the advantages of future learning preparedness. It will be a challenge to keep track of who has been trained in what areas and who has what skills in the midst of a workforce reduction. Changes in organizational structure will also demand a revision of the knowledge web. Eventually there will also need to be a closer link to the collective bargaining agreement, which will add the complexity of seniority and employment security provisions. We were assured that the training records and personal development assessments would not be associated with punitive decision making.

Succession planning and employee development programs may have a significant impact on retention of critical high-performing employees. Even if these efforts can contradict the effects of industry instabilities, it is also important to consider whether they will overcome other pressures. For example, cuts in R&D funding may reduce the opportunities for creative and challenging work. This affects the intrinsic excitement and cutting-edge attraction of aerospace work, which may reduce its ability to attract and retain new workers.

Knowledge management is critical to corporate success because it allows a firm to capture and use vital resources that reside and are developed in the workforce. Without adequate strategies to facilitate the flow of knowledge

and learning through the organization, companies will struggle. Rockwell Collins is taking steps to strategically manage the company's knowledge and skill resources. Ironically, the same instabilities driving these responses make them even more essential.

Teaching Notes

People are at the heart of new work systems, establishing stability and then driving continuous improvement. The Labor Aerospace Research Agenda (LARA) at MIT is committed to further our understanding of the human and institutional aspects of these new work systems, especially as they relate to broader issues of employment and vitality in the aerospace industry.

These case studies were written by a MIT-based research team and developed in conjunction with representatives from each of the sites with help from representatives of the United Auto Workers and the International Association of Machinists.

These case studies will be valuable to union leaders, labor educators, college professors, and human resource trainers as well as anyone interested in discussing current dilemmas in the aerospace industry around employment. These can be used as thought-starters in a classroom setting, in small discussion groups, or by individuals. This case study was prepared to exemplify the challenges of instability in the aerospace industry. It was written as a basis for dialogue and learning, not as an illustration of either effective or ineffective actions. There may be many possible answers to these questions. They are designed to foster constructive dialogue and action on these very challenging issues.

Potential Discussion Questions

- Which steps being taken by Rockwell Collins should help meet the conflicts inherent in such objectives as the need to cut costs and lay off significant portions of the labor force while maintaining a commitment to knowledge retention and knowledge building?

- How confident are you that the company can be successful, given the competing pressures of simultaneously reducing costs and maintaining an effective commitment to knowledge in the firm?

- What else should the company and/or the union(s) do to meet these objectives?

- What are the strongest aspects of the learning strategies described here? What are their greatest weaknesses/vulnerabilities? How would you overcome the vulnerabilities?

Betty Barrett and Kevin Long prepared this case with editorial and design input from Susan Cass, Patricia Proven, and other members of the LARA team. This case study is an example of the challenges of instability in the aerospace industry and was written as a basis for dialogue and learning – not as an illustration of either effective or ineffective actions.
